(a) a variance that causes a G to be present at nucleotide 464 of the mRNA (SEQ ID NO:1) encoded by the methylenetetrahydrofolate reductase gene;

(b) a variance that causes a U to be present at nucleotide 519 of the mRNA (SEQ ID NO:1) encoded by the methylenetetrahydrofolate reductase gene;

(c) a variance that causes a C to be present at nucleotide 1059 of the mRNA (SEQ ID NO:1) encoded by the methylenetetrahydrofolate reductase gene;

(e) a variance that causes an A to be present at nucleotide 1784 of the mRNA (SEQ ID NO:1) encoded by the methylenetetrahydrofolate reductase gene; and

(f) a variance that causes an C to be present at nucleotide 120 of the mRNA (SEQ ID NO:1) encoded by the methylenetetrahydrofolate reductase gene.

123. A method for selecting a treatment for a patient suffering from a condition or disease, comprising:

determining whether cells of the patient contain at least two variances in the methylenetetrahydrofolate reductase gene, wherein the presence or the absence of the variance in the gene is indicative of the effectiveness of said treatment for the condition or disease,

wherein the two variances are selected from the group consisting of:

C2

(a) a variance that causes a G to be present at nucleotide 464 of the mRNA (SEQ ID NO:1) encoded by the methylenetetrahydrofolate reductase gene;

(b) a variance that causes a U to be present at nucleotide 519 of the mRNA (SEQ ID NO:1) encoded by the methylenetetrahydrofolate reductase gene;

(c) a variance that causes a C to be present at nucleotide 1059 of the mRNA (SEQ ID NO:1) encoded by the methylenetetrahydrofolate reductase gene;

(e) a variance that causes an A to be present at nucleotide 1784 of the mRNA (SEQ ID NO:1) encoded by the methylenetetrahydrofolate reductase gene; and

(f) a variance that causes an C to be present at nucleotide 120 of the mRNA (SEQ ID NO:1) encoded by the methylenetetrahydrofolate reductase gene.